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ABSTRACT

The plants and plantlike organisms informally grouped together as algae show great diversity of form and size and occur in a wide variety of habitats. These extremely important photosynthesizers are also economically significant. For example, some species contaminate water supplies; others provide food for aquatic animals and for man; still others yield agar, diatomaceous earth, or fertilizer. This guide to the literature on algae is not intended to be a comprehensive bibliography, but is designed to provide the reader with a set of resources that can be used to focus on the topics. The document lists the subject headings used by the Library of Congress in cataloging information on algae. It also contains citations of materials categorized as: (1) introductions to the topic; (2) general surveys; (3) additional titles; (4) handbooks; (5) bibliographies; (6) reviews and conference proceedings; (7) government publications; (8) abstracting and indexing services; (9) journals; (10) representative journal articles; (11) technical reports; and (12) selected materials. (CW)

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ALGAE

Compiled by Diana Niskern

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SCOPE: The plants and plantlike organisms informally grouped together as algae show great diversity of form and size and occur in a wide variety of habitats. These extremely important photosynthesizers are also economically significant. For example, some species contaminate water supplies; others provide food for aquatic animals and for man; still others yield agar, diatomaceous earth, or fertilizer.

This guide to the literature on algae updates and supersedes TB 72-14. Not intended to be a comprehensive bibliography, this compilation is designed--as the name of the series implies--to put the reader "on target."

INTRODUCTIONS TO THE TOPIC

Berry, M. H. Algae. In The New book of popular science. v. 4. Danbury, Conn., Grolier, c1987. p. 32-42. Q162.N437 1987*

Silva, Paul C., and Richard L. Moe. Algae. In McGraw-Hill encyclopedia of science & technology: an international reference work in twenty volumes including an index. 6th ed. v. 1. New York, McGraw-Hill, c1987. p. 330-336. Q121.M3 1987*

SUBJECT HEADINGS used by the Library of Congress, under which books on algae can be located in most card, book, and online catalogs, include the following:

ALGAE (Highly relevant)
See also names of groups of algae, e.g., DIATOMS, SOIL ALGAE, CHAROPHYTA, CHLORELLA, CHLOROPHYCEAE, CYANOBACTERIA, RHODOPHYTA, etc., and names of individual algae, e.g., Laminaria digitata, Macrocystis integrifolia, Nereocystis luetkeana, etc.
ALGOLOGY (Highly relevant)
FRESHWATER ALGAE (Highly relevant)
MARINE ALGAE (Highly relevant)
AGAR (Relevant)
ALGAE AS FEED (Relevant)
ALGAE AS FOOD (Relevant)
ALGAE CULTURE (Relevant)
ALGAE PRODUCTS (Relevant)
KELPS (Relevant)

*Available in reference collection, Science Reading Room

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MARINE ALGAE AS FERTILIZER (Relevant)
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MARINE ALGAE CULTURE (Relevant)
SEAWEED (Relevant)
ALGAE, FOSSIL (Related)
COOKERY (MARINE ALGAE) (Related)
KELP BED ECOLOGY (Related)
RED TIDE (Related)
STROMATOLITES (Related)
WATER BLOOM (Related)

GENERAL SURVEYS

Bold, Harold Charles, and Michael J. Wynne. Introduction to the algae: structure and reproduction. 2nd ed. Englewood Cliffs, N.J., Prentice-Hall, c1985. 720 p. QK566.B64 1985*
Bibliography: p. 662-706.

Lee, Robert Edward. Phycology. Cambridge, Eng., New York, Cambridge University Press, 1980. 478 p. QK566.L44
Includes bibliographies.

Sze, Philip. A biology of the algae. Dubuque, Iowa, W. C. Brown, c1986. 251 p. QK566.S97 1986
Bibliography: p. 237-242.

Trainor, Francis Rice. Introductory phycology. New York, Wiley, c1978. 525 p. QK566.T7
Includes bibliographies.

ADDITIONAL TITLES

Algae as ecological indicators. Edited by L. Elliot Shubert. London, Orlando, Academic Press, 1984. 434 p. QK565.A46 1984
Includes bibliographies.

The Biology of seaweeds. Edited by Christopher S. Lobban and Michael J. Wynne. Berkeley, University of California Press, 1981. 786 p. (Botanical monographs, v. 17) QK570.2.B56 1981*
Includes bibliographies.

Chapman, V. J. Seaweeds and their uses. With chapters by D. J. Chapman. 3rd ed. London, New York, Chapman and Hall, 1980. 334 p. SH390.7.C46 1980*
Bibliography: p. 279-312.

Madlener, Judith Cooper. The seavegetable book. New York, C. N. Potter; distributed by Crown Publishers, c1977. 288 p. TX402.M3
Bibliography: p. 277-281.

McConnaughey, Evelyn. Sea vegetables: harvesting guide & cookbook. Happy Camp, Calif., Naturegraph Publishers, c1985. 239 p. TX402.M33 1985
Bibliography: p. 231-234.

The Physiological ecology of phytoplankton. Edited by I. Morris. Berkeley, University of California Press, 1980. 625 p. (Studies in ecology, v. 7) QK933.P48
Includes bibliographies.

Round, F. E. The ecology of algae. Cambridge, Eng., New York, Cambridge University Press, 1981. 653 p. QK565.R76
Bibliography: p. 574-627.

Stewart, W. D. P., ed. Algal physiology and biochemistry. Oxford, Blackwell Scientific, 1974. 989 p. (Botanical monographs, v. 10) QK565.S78 1974
Distributed in the U.S.A. by University of California Press, Berkeley, Calif.
Includes bibliographies.

HANDBOOKS

CRC Handbook of microalgal mass culture. Editor, Amos Richmond. Boca Raton, Fla., CRC Press, c1986. 528 p. SH389.H36 1986
Includes bibliographies.

Handbook of phycological methods. Sponsored by the Phycological Society of America Inc. Cambridge, Eng., University Press, 1973-85. 4 v. QK565.2.H36
Vol. 2-4 published by Cambridge University Press, Cambridge and New York.
Includes bibliographies.
Contents: v. 1. Culture methods and growth measurements, edited by J. R. Stein.--v. 2. Physiological and biochemical methods, edited by J. A. Hellebust and J. S. Craigie.--v. 3. Developmental and cytological methods, edited by E. Gantt.--v. 4. Ecological field methods, edited by Mark M. Littler and Diane S. Littler.

Lee, Thomas F. The seaweed handbook: an illustrated guide to seaweeds from North Carolina to the Arctic. New York, Dover Publications, 1986. 217 p. QK571.L43 1986*
"Unabridged republication, corrected by the author, of the work originally published by the Mariners Press, Boston, Massachusetts, in 1977."
Bibliography: p. 211-213.

Silva, Paul C. Names of classes and families of living algae: with special reference to their use in the Index nominum genericorum (plantarum). Utrecht, Bohn, Scheltema & Holkema; The Hague, Junk, 1980. 156 p. (Regnum vegetabile, v. 103) QK96.R4 vol. 103
Bibliography: p. 113-142.

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Algae abstracts: a guide to the literature. Prepared from material supplied by Water Resources Scientific Information Center, Office of Water Resources Research, Department of the Interior, Washington, D.C. New York, IFI/Plenum, 1973-76. 3 v. QK564.5.A38*
Contents: v. 1. To 1969.--v. 2. 1970-1972.--v. 3. 1972-1974.

Selected papers in phycology II. Edited by James R. Rosowski, Bruce C. Parker. Lawrence, Kan., Phycological Society of America, Book Division, c1982. 866 p. QK566.S44 1982*
Contains 77 reprinted papers and 45 original contributions. Includes 7 "special bibliographies" on such topics as algal aquaculture, commercial uses of algal products, algae in medicine, and algal nuisances as indicators of pollution. Also includes preliminary world lists of algal culture collections, marine and freshwater field stations, and phycological societies and journals.
"Books and monographs on algae:" p. 845-849.
"Glossary of selected terms on algae:" p. 850-864.

Thomas, W. H., and S. R. Gaines. Algae from the arid southwestern United States: an annotated bibliography. A subcontract report. Golden, Colo., Solar Energy Research Institute; Springfield, Va., available from the National Technical Information Service, June 1983. 143 p. (SERI/STR-231-1947) Pamphlet box*

STATE-OF-THE-ART REVIEWS AND CONFERENCE PROCEEDINGS

International Conference on Toxic Algae (1980, Wright State University). The water environment: algal toxins and health. Edited by Wayne W. Carmichael. New York, Plenum Press, c1981. 491 p. (Environmental science research, v. 20) RA1242.A36W37
"Proceedings of an International Conference on Toxic Algae, held June 29-July 2, 1980, at Wright State University, Dayton, Ohio."
"Directory to toxic blue-green algae (cyanobacteria) literature, compiled by Wayne W. Carmichael and Peter E. Bent:" p. 465-479.
Includes bibliographies.

International Seaweed Symposium (10th, 1980, Göteborg, Sweden). Xth International Seaweed Symposium: proceedings, Göteborg, Sweden, August 11-15, 1980. Editor, Tore Levring. Berlin, New York, W. de Gruyter, 1981. 780 p. QK564.I52 1980
Includes bibliographical references.

International Seaweed Symposium (11th, 1983, Tsingtao, China). Eleventh International Seaweed Symposium: proceedings of the Eleventh International Seaweed Symposium, held in Qingdao, People's Republic of China, June 19-25, 1983. Edited by Carolyn J. Bird and Mark A. Ragan. Dordrecht, Boston, W. Junk Publishers, 1984. (Developments in hydrobiology, 22) SH390.A15I58 1983
"Reprinted from Hydrobiologia, vol. 116/117 (1984)."
Includes bibliographies.

Progress in phycological research. v. 1- 1982- Amsterdam, New York, Elsevier Science Pub. Co. [distributor]. QK564.P76

GOVERNMENT PUBLICATIONS

Energy from open ocean kelp farms. Prepared at the request of Howard W. Cannon, chairman, Committee on Commerce, Science, and Transportation, and chairman, National Ocean Policy Study, United States Senate. Washington, U.S. Govt. Print. Off., 1980. 82 p. TP360.E54

At head of title: 96th Congress, 1st session. Committee print.
"Prepared by the OTA Oceans Program staff."
Includes bibliographical references.

Foster, Michael S., and David R. Schiel. The ecology of giant kelp forests in California: a community profile. Prepared for the National Coastal Ecosystems Team, Division of Biological Services, Research and Development, U.S. Fish and Wildlife Service, NASA-Slidell Computer Complex. Washington? U.S. Fish and Wildlife Service, 1985. 152 p. (U.S. Fish and Wildlife Service. Biological report, 85(7.2)) QH105.C2F67 1985

Bibliography: p. 125-150.

Palmer, Charles Mervin. Algae and water pollution: an illustrated manual on the identification, significance, and control of algae in water supplies and in polluted water. Cincinnati, Municipal Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency; Washington, U.S. Govt. Print. Off., 1977 [i.e. 1978] 124 p. QK567.P27 1978

"EPA-600-9-77-036."
An enlargement of the author's previous manual published in 1959 under title Algae in water supplies.
Bibliography: p. 111-118.

ABSTRACTING AND INDEXING SERVICES that index relevant journal articles and other literature are listed below. Some suggested terms are given as aids in searching.
The following indexes are available in most public and college libraries.

Applied Science & Technology Index (1913-) Z7913.I7*
See: Headings beginning Algae and cross-references

Biological & Agricultural Index (1916-) Z5073.A46*
See: Headings beginning Algae and Algal and cross-references

General Science Index (1978-) Z7401.G46*
See: Headings beginning Algae and Algal and cross-references

Magazine Index (1983-) Available on film/ROM reader
See: Headings beginning Algae
Kelp Bed Ecology
Kelps

Note: Consult reference librarian for location of abstracting and indexing services in the Science Reading Room

Readers' Guide to Periodical Literature (1900-) AI3.R45
See: Headings beginning Algae and cross-references

The following abstracting and indexing services, which should be used for more exhaustive searches, may be available only in large or specialized libraries.

ASFA Aquaculture Abstracts (1984-) SH1.A69*
See: Headings beginning Algal in Subject Index; Algae and names of particular algae in Taxonomic Index

Aquatic Sciences & Fisheries Abstracts (1971-) QH90.A1A68*
See particularly Part I: Biological Sciences and Living Resources for headings in the Subject Index under Algal, Algology, Seaweed, etc., and in the Taxonomic Index under Algae and under taxa of interest

Bibliography of Agriculture (1942-) Z5073.B618*
See: Headings beginning Algae and Algal
Algicides

Biological Abstracts (1926-) QH301.B37*
See keywords of interest in the Subject, Biosystematic, and Generic Indexes

Chemical Abstracts (1907-) QD1.A51*
See Algae and cross-references in the General Subject Index

Energy Research Abstracts (1976-) Z5853.P83U544b*
See: Algae

Food Science and Technology Abstracts (1969-) TP368.F678*
See: Algae
Agar-agar
Seaweeds

Index Medicus (1960-) Z6660.I42*
See: Headings beginning Algae

Microbiology Abstracts. Section C, Algology, Mycology & Protozoology (1972-) QK564.M5
See Contents page in monthly issues and key words in the annual subject index

Oceanic Abstracts (1964-) GC1.O24*
See: Headings beginning Algal

Pollution Abstracts (1970-) TD172.P65*
See: Algae

Selected Water Resources Abstracts (1968-) TC1.S45*
See: Headings beginning Algae and Algal

JOURNALS in a wide variety of fields may contain articles on algae. The following titles represent only a small sample.

Bioscience QH1.A277
British Phycological Journal QK564.B74
Canadian Journal of Botany QK1.N322
Journal of Phycology QK564.P47
Oceans GC1.O34
Phycologia QK564.P44
Science Q1.S35
Sea Frontiers GC1.S4
Water Pollution Control Federation. Journal TD511.S4

REPRESENTATIVE JOURNAL ARTICLES

Booth, Ernest. The history of the seaweed industry. Chemistry and industry, no. 13, July 2, 1977: 528-534; no. 21, Nov. 4, 1978: 838-840; no. 2, Jan. 20, 1979: 52-55; no. 11, June 2: 378-383. TP1.S6332

Contents: pt. 1. The alginate industry.--pt. 2. E. C. C. Stanford and the iodine industry.--pt. 3. The iodine industry.--pt. 4. A miscellany of industries.

Brook, Alan. Algae with a taste for the unusual. New scientist, v. 115, Sept. 10, 1987: 55-57. Q1.N52

Carmichael, Wayne W., and others. Algal toxins and water-based diseases. CRC critical reviews in environmental control, v. 15, no. 3, 1985: 275-313. 228 refs. TD172.C5

Darnall, Dennis W., and others. Selective recovery of gold and other metal ions from an algal biomass. Environmental science & technology, v. 20, Feb. 1986: 206-208. TD180.E5

Häder, Donat-P. Photosensory behavior in procaryotes. Microbiological reviews, v. 51, Mar. 1987: 1-21. 287 refs. QR1.B25

Lewin, Ralph A., and Phillip T. Robinson. The greening of polar bears in zoos. Nature, v. 278, Mar. 29, 1979: 445-447. Q1.N2

Pirt, S. John. Algal photosynthesis: the Aladdin's Cave of biotechnology. Chemistry and industry, no. 23, Dec. 3, 1984: 843-849. TP1.S6332

Ward, C. H., and R. L. Miller. Algal bioregenerative systems for space life support. The Physiologist, v. 27, no. 6, suppl. 1984: S21-S24. QP1.P55

Wharton, Robert A., Jr., Bruce C. Parker, and George M. Simmons, Jr. Distribution, species composition and morphology of algal mats in Antarctic dry valley lakes. Phycologia, v. 22, Dec. 1983: 355-365. QK564.P44

TECHNICAL REPORTS and other types of literature are indexed in the following guides:

Government Reports Announcements & Index (1946-) Z7916.G78*
See: Algae
Cyanobacteria
Seaweeds

Monthly Catalog of United States Government Publications (1895-) Z1223.A18*
See: Algae
Algae Control

Scientific and Technical Aerospace Reports (1963-) TL500.S35*
See: Algae
Blue Green Algae
Chlorella

SELECTED TECHNICAL REPORTS sold by the National Technical Information Service, Springfield, Virginia 22161, include the following:

Darnall, Dennis W. Biosorption/heavy metal ions from industrial/ mining waste waters. Las Cruces, N.M., New Mexico State Univ., June 1986. 20 p. PB86-222676**

Karel, M., A. R. Kamarei, and Z. Nakhost. Utilization of nonconventional systems for conversion of biomass to food components. Potential for utilization of algae in engineered foods. Cambridge, Mass., Dept. of Applied Biological Sciences, Massachusetts Institute of Technology, March 1985. 37 p. (NASA-CR-176257) N86-11830**

Packer, Lester. Production of hydrogen by cyanobacteria. Final report (April 1982-March 1984). Berkeley, Calif., Membrane Bioenergetics Group, Univ. of California, June 1984. 80 p. PB85-113421**

Proceedings of Workshop on Algal Management and Control. Held on 9-12 March 1980 at Pacific Grove, Calif. Final report. Las Vegas, Nev., U.S. Environmental Protection Agency, May 1981. 313 p. AD-A101554**

"Algicides and algal management and control bibliography by G. W. Prescott:" p. 259-299.

Radmer, R., and others. Algal culture studies related to a closed ecological life support system (CELSS). Baltimore, Md., Martin Marietta Laboratories, Oct. 1984. 47 p. (NASA contractor report, 177322) N85-16470**

Smith, J. E., and others. Control of trace metal pollutants by algae. Syracuse, N.Y., Syracuse University, 1983. 129 p. PB84-208800**

**Available in microform collection, Science Reading Room

SELECTED MATERIALS available in the Science Reading Room pamphlet boxes include

Bach, Steven D. The ecology of coral reef algae. Sea frontiers, v. 25, Mar./Apr. 1979: 99-104.

Geary, Ida. Seaweed washed ashore; collecting and preserving the plants of the sea. Oceans, v. 13, Mar./Apr. 1980: 6-10.

Hunt, Jeffrey W. Algal biochemical tricks and classification. American biology teacher, v. 40, Dec. 1978: 528-531, 562.

Littler, Mark M., and others. Deepest known plant life discovered on an uncharted seamount. Science, v. 227, Jan. 4, 1985: 57-59.

Miller, Julie Ann. Diet for a blue planet. Science news, v. 127, Apr. 6, 1985: 220-222.

Porter, Lee A. Use of brown algae to demonstrate natural products techniques. Journal of chemical education, v. 62, July 1985: 635-636.

ADDITIONAL SOURCES OF INFORMATION

To identify the current addresses of relevant organizations and research projects, consult the Encyclopedia of Associations (AS22.E5*) under Phycological and Research Centers Directory (AS25.D5*) under Algae and Marine Algae.